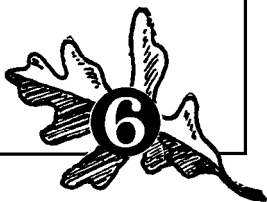


# Forest and wildlife Benefits on Private Land



## *Wood Products and Wildlife in Missouri*

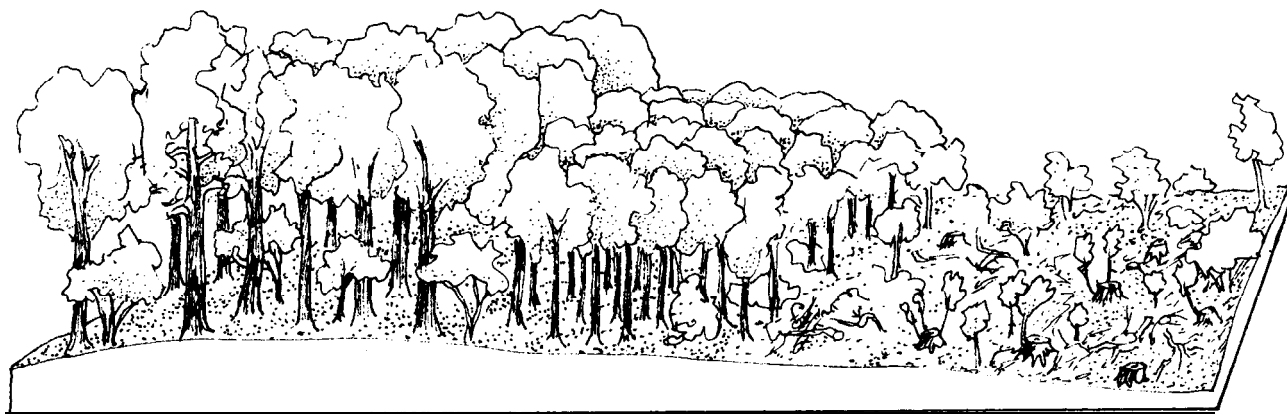
Many people believe protecting wildlife habitat is incompatible with growing trees for a profit. However, timber harvesting is often an economical way to improve wildlife habitat. By combining some basic principles of forest management with an understanding of wildlife needs, landowners can take full advantage of timber harvesting as a wildlife management tool.

Regardless of whether a landowner is considering cutting a few firewood trees or having a commercial timber sale, some careful planning is in order. While the condition of the woodland is very important, a forest owner's objectives or goals for the land also play a large role in the decision to cut.

Primary goals for a forest owner can range anywhere from timber production and recreation, to wild-

life habitat and watershed protection. Often the landowner desires to meet several objectives, some of which may conflict with others. Most wildlife needs, however, can be met without detracting from other goals.

After a landowner's objectives are defined, some even tougher questions arise when deciding where and which trees to cut. The landowner has two basic choices when deciding which forest management system to use: uneven-aged management and even-aged management. Both systems can be compatible with wildlife habitat development, but which is best suited for a woodlot depends on the forest conditions, tract size and landowner objectives.



*Even-aged management (above) requires the harvesting of trees in solid blocks, while uneven-aged management (below) involves the selection of individual trees throughout a stand.*

## Uneven-aged Management For Trees Of All Ages

This forest management system attempts to keep three or more different ages of trees intermingled throughout the woodlot. Many woodland owners like this system of selective cutting to meet multiple objectives. As with any forest management system, mast production is high priority. Mast is the fruit of trees and shrubs. "Hard mast" includes the nuts of oak, hickory, walnut, etc., and is usually from the tallest trees. "Soft mast" includes the fruits of dogwood, grape, blackberry, etc., that are commonly found in the lower level of the forest.

Acorns are a primary food source in oak-hickory forests. Years of acorn crop failure can have harsh effects on wildlife populations. Maintaining a wide variety of trees can help guard against such years by providing mast from other kinds of trees. In selective timber sales, strive to leave a combination of the various red oaks, white oaks and hickories along with a variety of other mast producing trees like walnut and pecan.

Wildlife often suffers from the loss of too many hard mast-producing trees in the uneven-aged system. Selective harvests most commonly cut the large trees to allow the smaller and less vigorous trees and saplings to grow for the next cutting. However, the larger trees are the ones which produce the most mast. Leaving an occasional good nut-producing tree or group of trees will provide wildlife food. Or, to maximize financial return, leave a lesser quality group of trees. About 25 oaks per acre, at least 14 inches in diameter, are usually enough.

Soft mast provides wildlife with a variety of foods during years of good acorn production. However, it becomes vitally important during years of poor acorn production. Many times, a selective timber sale will cut taller soft mast trees which are important to wildlife such as blackgum, hackberry and persimmon. Keeping some of these trees will benefit wildlife.

Normal logging operations also sometimes needlessly cut or damage smaller soft mast-producing trees in the understory. These trees and plants include dogwood, huckleberry, spicebush, hawthorn, mulberry, sumac, coralberry, wild rose, grape, greenbrier, redcedar, blackhaw, serviceberry, Carolina buckthorn and eastern wahoo. Simply mak-

ing a timber operator aware that these trees are desirable for wildlife could aid in their protection.

A third and equally important source of food for wildlife is browse. Browse is a combination of plants, weeds, grasses, woody vines and shrubs found on or near the forest floor that is eaten by wildlife. As with soft mast-producing plants, browse needs sunlight to hit the forest floor in order to grow. For this reason, selective timber harvests usually decrease the amount of browse.

Harvesting groups of trees rather than individuals will reduce this problem. Another option is to simply thin some portions of the forest. For example, the border between a woodland and a field would be an ideal location to cut some extra trees. Other likely areas would be the borders of log decking areas or sawmill sites. Planting some legume food plots or carrying out one or more small clearcuts would also provide more browse.

With proper management, a forest can also provide very important cover needed by most animals. However, timber sales often pose a threat to den trees. These living, hollow trees are necessary for the survival of cavity-nesters while other animals use them for escape cover. In a harvest, removing some den trees may be required, but many can and should be left.

Snags, or standing dead trees, deserve equal consideration. Cutting down snags can mean the loss of a red-tailed hawk's favorite perch, a woodpecker's favorite feeding grounds, or a bird's nesting site.

The understory can also provide valuable protection from weather and predators. Stacks of tree tops and limbs left by loggers provide extra ground cover. To make this easier, loggers can cut two or three trees so their tops land in the same spot. Compacting the tops with a 4-wheel drive skidder, or pushing the extra logs into a heap will provide a good home to reptiles, amphibians, and small animals.

## Even-aged Management For Trees Of Equal Age

Even-aged management results in stands of trees which are nearly the same age. When properly carried out, this system maximizes timber production and benefits wildlife habitat. The most common type of timber harvest associated with even-aged management is a small clearcut. For the first five years after a small clearcut, wildlife food production soars. Valuable escape and nesting cover, as well as browse, is available first from the remains of felled trees and then from the lush regrowth. However, large, indiscriminate clearcuts can have an adverse effect.

Following are some considerations to be incorporated into an even-aged management plan to benefit the overall wildlife habitat:

1. Clearcuts are most beneficial to wildlife when they are small (1 to 15 acres). If large areas must be clearcut, consider doing it over a period of years rather than at one time. If this is not possible, try breaking up the large areas by leaving a small strip of uncut timber through the middle. Better yet, break it up into irregularly shaped areas to provide wildlife with forest edge. The strips



*Trees such as sassafras, blackgum, dogwood, mulberry and pawpaw are important soft mast producers.*

should be irregular in width, but should be wide enough to still shade the ground. Ridgetops, main water drainages, or side hollows are good locations to leave these strips which provide wildlife food while the clearcuts are regenerating.

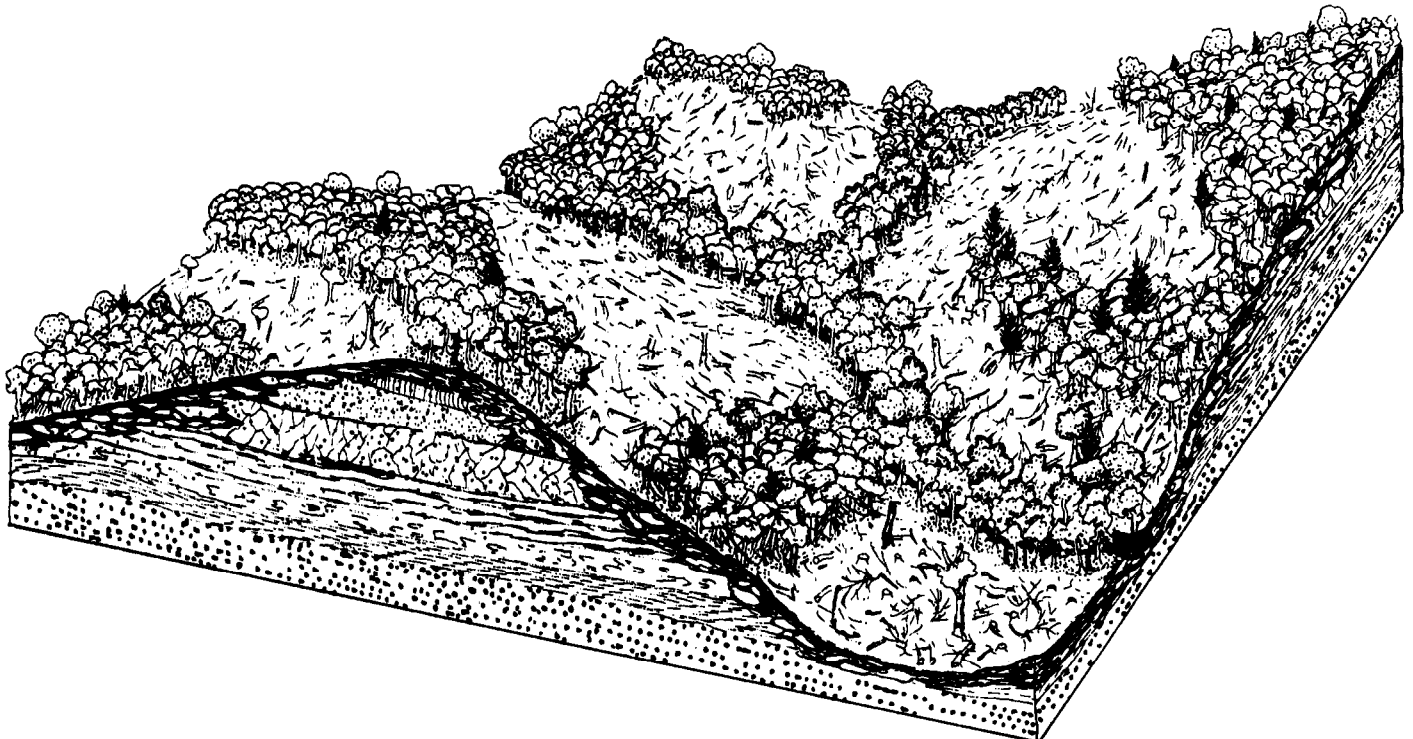
2. Clearcuts, especially larger ones, should be irregular in shape and fitted to the landscape. This maximizes the amount of clearcut border and also makes cuts more pleasing to the eye. Avoid square, rectangular, or regularly shaped blocks.
3. Clearcuts should be located on a variety of soil types. For example, if four clearcuts are needed, one may be located on a ridgetop, one in a bottomland, one on a north-facing hillside, and one on a south-facing hillside. This, too, will ensure a variety of trees and ground cover, because the more fertile soil will respond faster with a different plant species than the drier soils.
4. Leave some snags and den trees along the edges of the clearcuts to ensure protection for certain kinds of wildlife. The number to leave depends on availability and overall objectives.
5. Plan for adequate mast production. In some cases, this may mean postponing a clearcut.
6. Leave a buffer zone on both sides of streams flowing through clearcuts to prevent excessive warming of the waters. If stream bank erosion is not a threat, some trees may be removed. The width of buffer zones varies with the size of a stream, but a 100-foot zone is usually the minimum necessary to protect any permanent stream.

7. Before designating an area for clearcutting, it should be thoroughly inspected to ensure it does not include fragile habitats or special features that would be harmed by clearcutting (springs, caves, natural ponds, endangered species, etc.).

## Selecting Your Logger

Many landowners find they do not have the time, money or means to carry out wildlife management recommendations. Timber sales can solve this problem by providing income that can be put back to work for wildlife. In other words, good land management includes putting some money back into the source. Timber sales can be a relatively inexpensive way to accomplish wildlife management with the right timber cutter and skidder driver.

Whether you go through personal contacts or a formal bidding, the right timber operator must understand and be willing to work with you to achieve your goals. If an operator lacks the needed equipment, or feels your objectives are unreasonable, look for another logger. If all contractors feel this way, re-adjust your requirements and try again. Above all, do not give up your wildlife plan just because the first contractor found it unreasonable. If, however, the plan requires a lot of work or the use of machinery and is costly to the logger, be prepared to accept a reduced price for the timber. Both parties can almost always reach a favorable agreement, perhaps with the help of a professional forester.



*To best benefit wildlife, clearcuts should be evenly distributed throughout the area with ample buffer strips between sites.*

## Timber Sale Contracts

After choosing the timber operator, a well-prepared timber sale contract is necessary to defend the interests of both buyer and seller. Avoid "hand-shake agreements". A legally-binding contract keeps a logger from failing to perform a specified task and prevents a landowner from making last minute changes that might prove costly to the operator.

To enhance wildlife habitat, proper negotiation will allow timber operators to carry out some of the following recommendations:

1. Before cutting, locate log decking sites and/or sawmill sites.
2. Leave den trees, snags and other reserve trees. These should be already be designated for the cutter. Take extra care with tree felling and log skidding operations to avoid unnecessary damage to these trees.
3. Keep equipment out of critical areas (glades, creeks, etc.) or areas to be left uncut. Do not cause unnecessary damage to streams and waterways with skidding equipment or by blocking them with tree tops.
4. Do not fall tree tops on fences, in streams or in forest openings where they're not wanted.
5. Keep skid trails and roads to a minimum and use discretion when laying out such trails.
6. Construct wildlife watering holes if dirt moving equipment is available.

7. Leave some logs scattered in the woods for grouse drumming logs rather than skidding them all into a pile.
8. Bunch tree tops where extra cover is needed, or ride over them with a skidder where debris is needed close to the ground.
9. Limit access to areas by blocking certain roads after the sale, or by locking gates at the end of each workday.
10. Do mop-up work on clearcuts after commercial timber is removed.
12. Clear off log deck and mill sites after sale and sow the area with grass and legume seeds.

Desired timber sale results can only be obtained with proper supervision of the logging operation. The person in charge should be present the day the sale begins to make sure everyone understands the desired results. If the operator making the contract negotiations is not present for the actual logging work, frequent visits to the logging site will ensure the logging crew is fulfilling the contract.

Private landowners who would like help identifying and reaching wildlife and forest goals can contact the Missouri Department of Conservation. The Department has professionally trained foresters, wildlife biologists and conservation agents who are available free of charge to help landowners answer these questions. Landowners will find that sound conservation and management of forest lands can result in increased financial returns, improved wildlife habitat, and personal satisfaction.

*(1) A typical even-aged management plan would include an intermediate harvest to remove lesser quality individuals. (2) The remaining trees grow to maturity and (3) are then harvested. (4) Follow-up work in the harvested area is required to achieve an (5) even-aged condition.*

